

tyco

Electronics

Energy Division

<http://energy.tycoelectronics.com>

Challenger Series of Analog Panel Meters



Challenger Series of Analog Panel Meters



The Challenger range of analog panel meters offers accurate measurement and indication of most electrical and electronic parameters in industry standard 1½", 2½", 3½" and 4½" case sizes. This innovative design features a detachable lower fascia plate, which allows the flexibility of either surface or window mounting. The fascia is simply unclipped to achieve the completely flush panel appearance of rear of panel window mounting.

The range offers AC and DC ammeters, voltmeters and frequency meters utilizing a high torque pivot and jewel movement. AC moving coil rectified meters provide 1.5% accuracy of full scale value and feature a rear zero adjuster screw for tamperproof installation. AC moving iron meters also provide 1.5% high accuracy and true RMS measurement.

Features

Measurement and indication of AC amps, volts, frequency and DC signals

Surface or window mounting

Rear zero adjuster on moving coil meters

High torque pivot and jewel movement

True RMS measurement meters

AC and DC inputs

Up to 40A DC direct connected

Up to 50A AC direct connected

Benefits

AC moving iron and moving coil mechanisms

Reduced inventory

4 ANSI standard case sizes

Detachable lower fascia plate

Easy to modify for distributors

Through holes for back of panel mounting

Applications

Marine panels

Switchgear

Distribution systems

Control panels

Embedded generation

Energy management

Building management

Utility power monitoring

Process control

Motor monitoring

Compliant With

ANSI C39.1 1981

IEC 51

UL3111-1

EMC

LVD

UL Pending

Operation

The Challenger series utilizes a traditional pivot and jewel movement, incorporating specially hardened steel pivots and a spring loaded jewel. This robust mechanism is ideally suited for all applications including the most arduous of conditions.

Moving Coil Meters

These meters offer a center cored, self-shielding moving coil movement using pivots, hairsprings and sprung jewels. Variations in movement are limited by design. All DC voltmeters are 1000 ohms per volt, moving coil rectified products run at 900 ohms per volt. Millivolt meters use the 5 milliamps/50mV movement.

Moving Iron Meters

This clapper type repulsion design utilizes a pivot, hairspring and jewel movement. The bottom jewel is oil filled to provide damping while the top is sprung for resilience. All voltmeters are manufactured with internal voltage dropper resistors.

Frequency Meters

Frequency meters utilize a 1mA/35ohm DC moving coil movement driven by an EMC hard frequency conversion circuit.

Dials, Pointers and Scales

Standard dials are matt white with black printed scales and a tubular knife-edge matt black pointer. The 90° scales are balanced within 1% of scale length and feature a highly repeatable flattened arc scale shape, ensuring consistently accurate measurement readings. Dials are interchangeable between the Challenger series of products using the same input within the published specification of the meter. Options for non standard customer specific dials are available upon request.

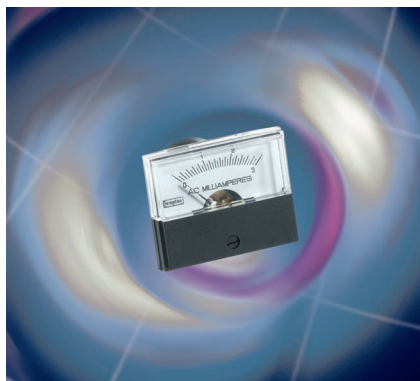
Current Transformers and Shunts

Crompton offers a comprehensive range of current transformers and shunts, used to drive the Challenger series of panel meters for the safe and simple measurement of AC and DC current.

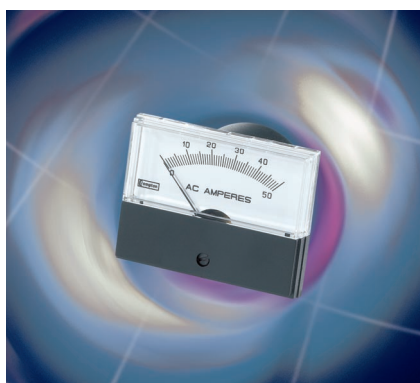
Our extensive range of current transformers provides accurate measurement of AC current and ratio matching to a consistent 5 or 1 Amp secondary current, proportional to the primary current.

Our range of shunts ensures a DC millivolt signal exactly proportional to the system current to drive the ammeters, providing accurate measurement of DC current up to 12000A, with secondary inputs of, 50, 60, 75 or 100mV DC to match the Challenger input.

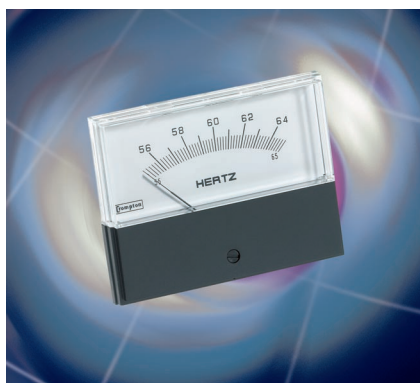
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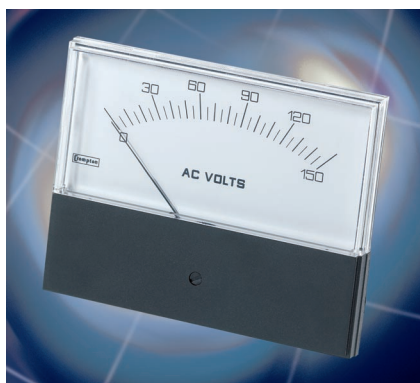
Model 361 (1 1/2")



Model 362 (2 1/2")



Model 363 (3 1/2")



Model 364 (4 1/2")

Specification

Accuracy	
DC Ammeters and Voltmeters	1.5% 0 to 100% of full scale deflection
AC Ammeters and Voltmeters	Moving Iron: 1.5% 10 to 100% of full scale deflection Moving Coil: 1.5% 10 to 100% of full scale deflection
Frequency Meters	0.5% of end scale value
Input Ratings	
DC Moving Coil Ammeters	50µA to 40A DC. (Model 361: 10A max)
DC Moving Coil Voltmeters	50mV to 600V DC
DC Moving Coil Center Zero Ammeters	+/-50mA to +/-40A DC. (Model 361: 10A max)
DC Moving Coil Center Zero Voltmeter	+/-50mV to +/-600V DC. Standard 1k ohm/volt
DC Moving Coil Suppressed Zero Ammeters	4/20mA DC
DC Moving Coil Suppressed Zero Voltmeters	1/5, 8/16, 16/32 or 12/24 V DC
AC Moving Coil Ammeters	100µA to 750mA AC
AC Moving Coil Voltmeters	20 to 600V AC. Standard 900ohms/volt
AC Moving Iron Ammeters	1 to 50A AC (Model 361: non applicable)
AC Moving Iron Voltmeters	3 to 600V AC (Model 361: non applicable)
Frequency	100/130V, 200/250V, 360/440V, 50Hz, 60Hz or 400Hz (Model 361: non applicable)
Burden	Ammeter 0.5VA Voltmeter: 4.5VA Frequency: 4VA
Overload	1.2 continuous x 10 for 0.5 seconds
Enclosure	
Movement	High torque pivot and jewel moving coil and moving iron
Scale Balance	Within 1% of scale length
Relative Humidity	25% to 80% nominal range of use
Operating Temperature	-0°C +40°C (-32°F to + 104°F)
Storage Temperature	-20°C +55°C (-4°F to + 131°F)
Case and Lower Mask	Matt black case UL94V. Polycarbonate cover
Window	Shatterproof polycarbonate
Surface Mounting	4 corner studs
Rear of Panel Mounting	2 through hole mounts (Model 361: facility pending)
Compliant With	
Performance	ANSI C39.1 1981 and IEC 51
Manufacture	UL3111-1
Scaling	ANSI C39.1 1981
Safety	IEC61010-1 (LVD) and BS EN 61326:1998 (EMC)
Vibration	ANSI C39.1 1981 cl. 5.13

Product Codes

Input	Model 361 Catalog No.	Model 362 Catalog No.	Model 363 Catalog No.	Model 364 Catalog No.
DC Moving Coil Amps	361-01A	362-01A	363-01A	364-01A
DC Moving Coil Volts	361-01V	362-01V	363-01V	364-01V
DC Moving Coil Center Zero Amps	361-01C	362-01C	363-01C	364-01C
DC Moving Coil Center Zero Volts	361-01N	362-01N	363-01N	364-01N
DC Moving Coil Suppressed Zero Amps	361-01R	362-01R	363-01R	364-01R
DC Moving Coil Suppressed Zero Volts	361-01S	362-01S	363-01S	364-01S
AC Moving Coil Amps	361-01B	362-01B	363-01B	364-01B
AC Moving Coil Volts	361-01W	362-01W	363-01W	364-01W
AC Moving Iron Amps	N/A	362-02A	363-02A	364-02A
AC Moving Iron Volts	N/A	362-02V	363-02V	364-02V
Frequency	N/A	362-41S	363-41S	364-41S

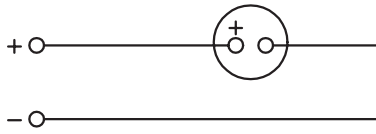
Please specify current, voltage, frequency and required options at time of ordering

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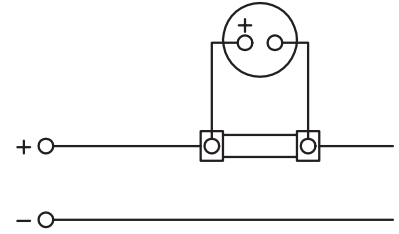


Connections

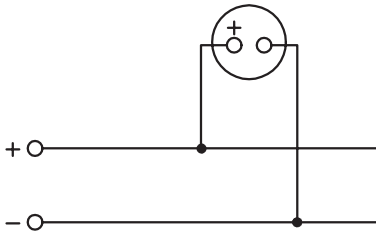
DC Amps – Self contained



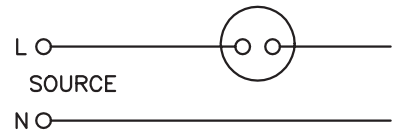
DC Amps – For use with external shunt



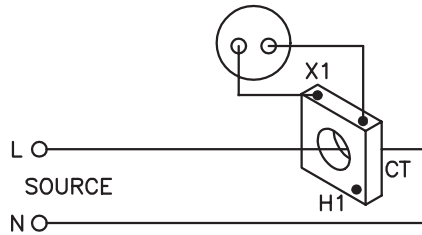
DC Volts



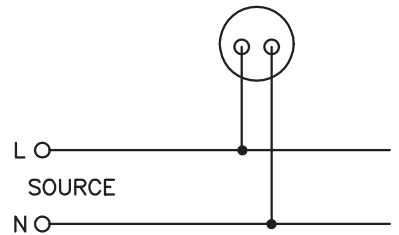
AC Amps – Self contained



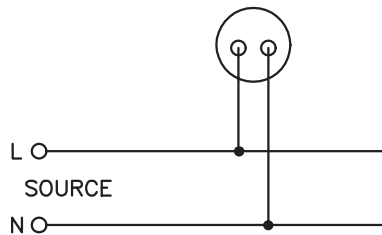
AC Amps – For use with current transformer



AC Volts



Frequency Meter

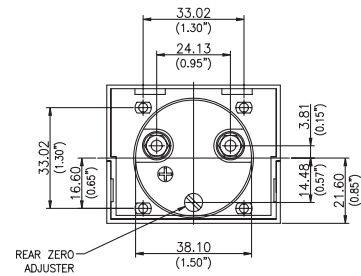
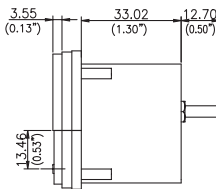
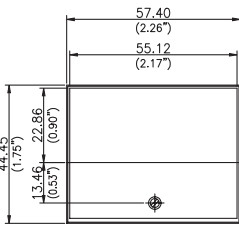


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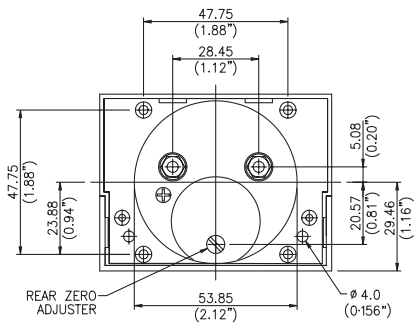
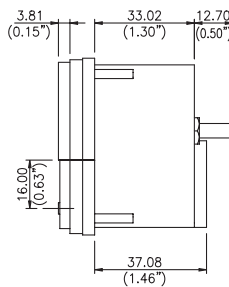
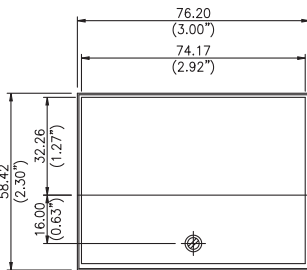


Dimensions – Surface Mount

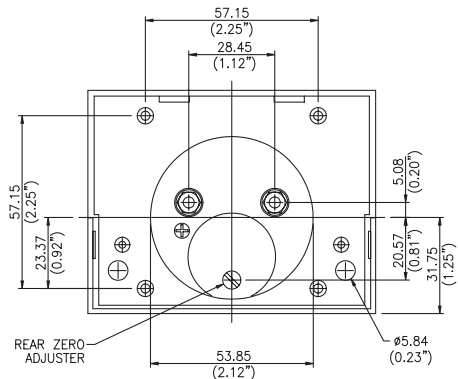
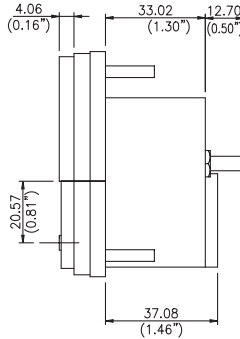
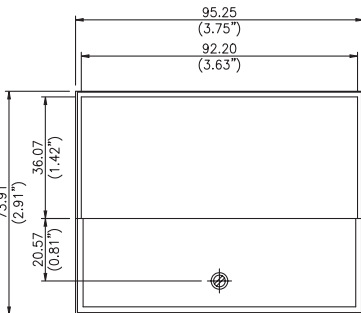
Model 361



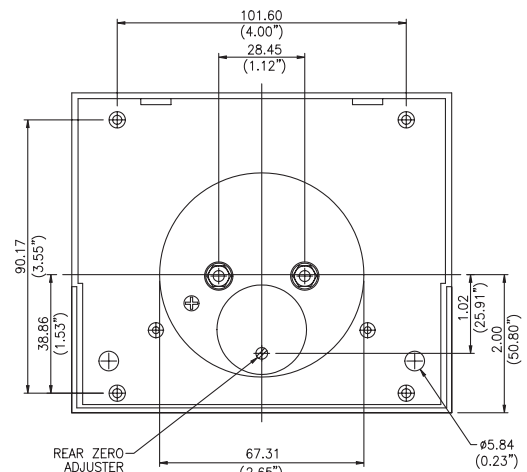
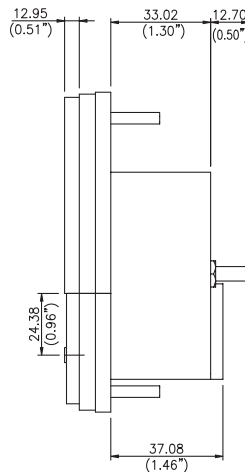
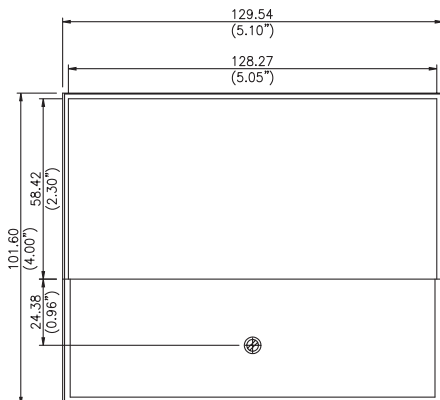
Model 362



Model 363



Model 364

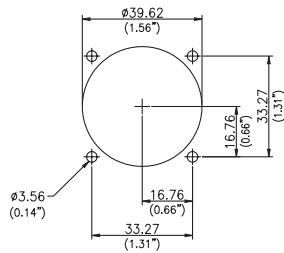


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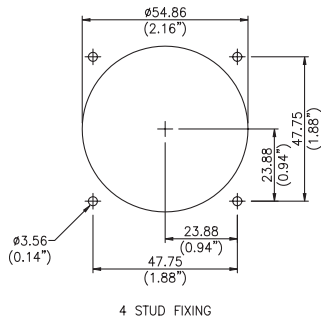


Dimensions – Panel Mount

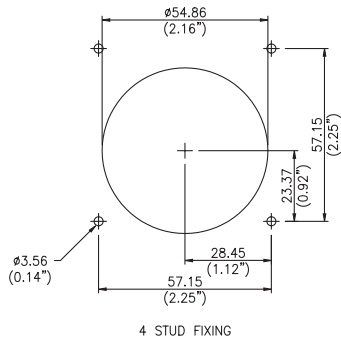
Model 361
Surface Mount Cut Out



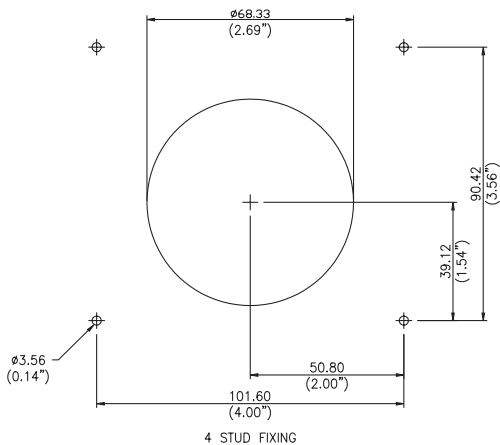
Model 362
Surface Mount Cut Out



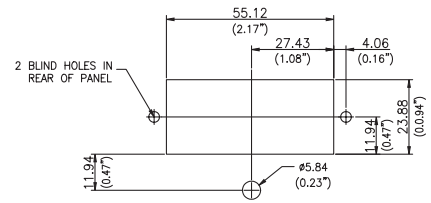
Model 363
Surface Mount Cut Out



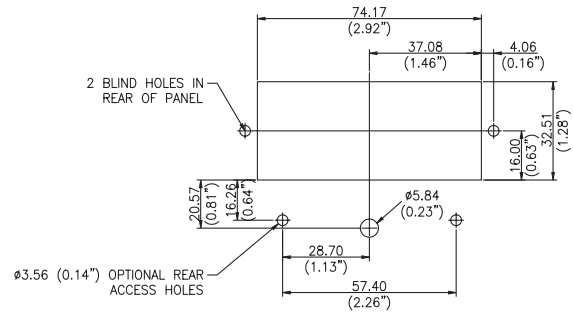
Model 364
Surface Mount Cut Out



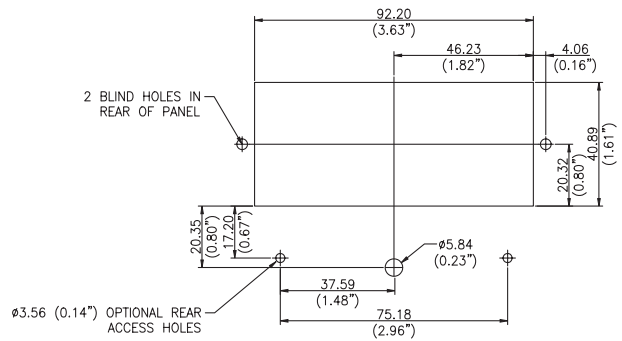
Window Mount Cut Out



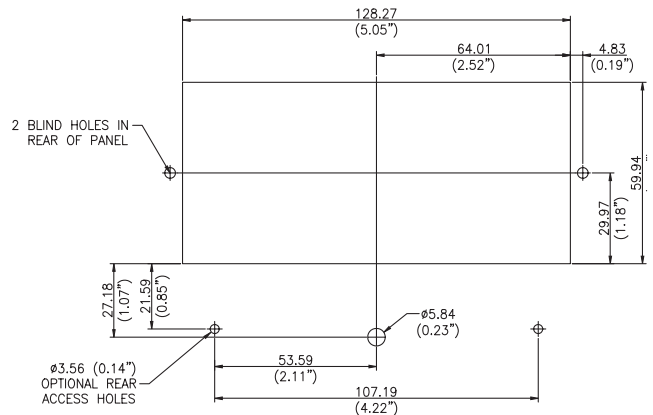
Window Mount Cut Out



Window Mount Cut Out



Window Mount Cut Out



All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. ALR, AMP, AXICOM, B&H, BOWTHORPE EMP, CROMPTON INSTRUMENTS, DORMAN SMITH, DULMISON, GURO, HELLSTERN, LA PRAIRIE, MORLYNN, RAYCHEM, and SIMEL are trademarks.

Energy Division – a pioneer in the development of economical solutions for the electrical power industry. Our product range includes: Cable accessories, connectors & fittings, electrical equipment, instruments, lighting, insulators & insulation enhancement and surge arresters.

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